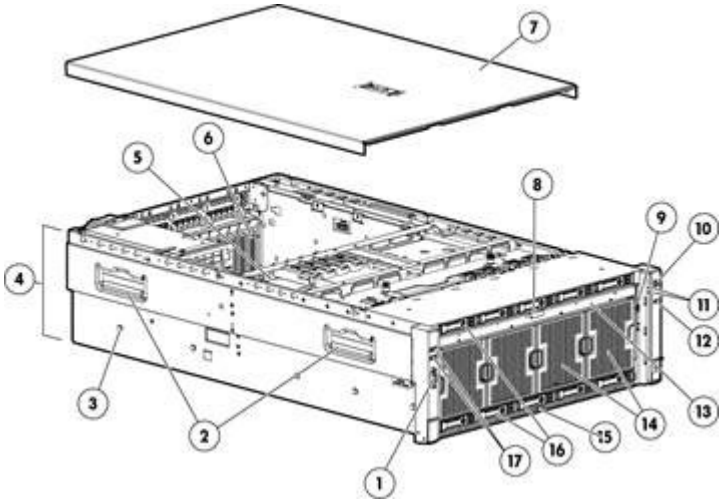
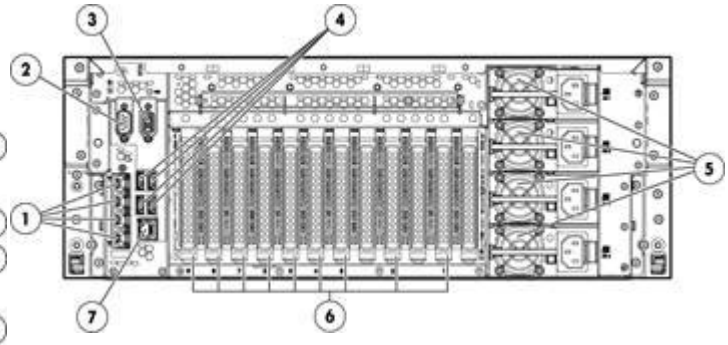
Overview

The HP ProLiant DL580 Gen8 Server is an enterprise-grade four socket (4S) x86 server offering breakthrough performance, rock-solid reliability, and compelling consolidation and manageability efficiencies. It is ideal for mission-critical enterprise, business intelligence, and database applications.

Featuring Intel® Xeon® E7-4800/8800 v2 processors, the DL580 Gen8 offers blazing fast results with enhanced processor performance, more memory slots (96 DIMMs), greater IO bandwidth (9 PCIe Gen3.0 slots), and increased storage performance (12 Gbps SAS). HP ProLiant DL580 Gen8 has security and data protection features for system resiliency that your business can depend on. With intelligent manageability through HP OneView, iLO 4, and user-inspired features, you get faster, lower cost infrastructure management.





Front View:

1. One front video port
2. Server lifting handles
3. Universal Tool-less "Snap in" sliding rail solution
4. 4U (7" height) form factor
5. Support for up to four Intel® Xeon® 4800/8800 v2 Processors
6. Up to 9 slots supported; all full-length/full-height
7. Quick removal access panel
8. Quick release lever for Processor and Memory drawer
9. Slide out Systems Insight Display
10. Power button
11. Health and Network LEDs
12. Unit ID LED
13. Front accessible Processor and memory drawer
14. 4 Hot Plug Redundant Fans
15. Asset tag
16. Support for up to 10 Small Form-Factor (SFF) drives
17. Two front accessible USB 2.0 ports

Rear View:

1. NIC ports
2. Serial port
3. Video port
4. Four (4) USB ports
5. Hot Plug Redundant Power Supplies (2 or 4 depending on the model)
6. 9 PCIe 3.0 IO Expansion Slots
7. iLO connector

Standard Features

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor One or more of the following depending on model	**Fifteen-Core Processors** Intel® Xeon® E7-4890v2 (2.8GHz/15-core/37.5MB/155W) Processor Intel® Xeon® E7-4880v2 (2.5GHz/15-core/37.5MB/130W) Processor Intel® Xeon® E7-4870v2 (2.3GHz/15-core/30MB/130W) Processor Intel® Xeon® E7-8880Lv2 (2.2GHz/15-core/37.5MB/105W) Processor **NOTE:** This is a power optimized processor **Twelve-Core Processors** Intel® Xeon® E7-4860v2 (2.6GHz/12-core/30MB/130W) Processor Intel® Xeon® E7-4850v2 (2.3GHz/12-core/24MB/105W) Processor Intel® Xeon® E7-8857v2 (3.0GHz/12-core/30MB/130W) Processor **NOTE:** This is frequency optimized processor suited high performance computing applications **Ten-Core Processors** Intel® Xeon® E7-4830v2 (2.2GHz/10-core/20MB/105W) Processor Intel® Xeon® E7-8891v2 (3.2GHz/10-core/37.5MB/155W) Processor **NOTE:** This is a lower core, higher frequency processor for software licensing cost optimization **Eight-Core Processors** Intel® Xeon® E7-4820v2 (2.0GHz/8-core/16MB/105W) Processor **Six-Core Processors** Intel® Xeon® E7-4809v2 (1.9GHz/6-core/12MB/105W) Processor Intel® Xeon® E7-8893v2 (3.4GHz/6-core/37.5MB/155W) Processor **NOTE:** This is a lower core, higher frequency processor for software licensing cost optimization
Cache Memory One of the following depending on model	37.5MB (1 x 37.5MB) Level 3 cache (E7-4890 v2, E7-8880Lv2, E7-4880v2, E7-8891v2, E7-8893v2) 30MB (1 x 30MB) Level 3 cache (E7-8857v2, E7-4870v2, E7-4860v2) 24MB (1 x 24MB) Level 3 cache (E7-4850v2) 20MB (1 x 20MB) Level 3 cache (E7-4830v2) 16MB (1 x 16MB) Level 3 cache (E7-4820v2) 12MB (1 x 12MB) Level 3 cache (E7-4809v2)
Chipset	Intel® C602J Chipset Intel® Xeon® E7-4800/8800 v2 Processor Family **NOTE:** For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/

Standard Features

Upgradeability

Up to:
Four (4) processors
Ninety-six (96) DDR3 DIMM slots
Nine (9) PCIe Gen3 expansion slots
Note: PCIe slot availability is dependent on the number of processors installed. Please refer to the "Expansion slots" section for more details.
Ten (10) SFF internal HDD/SSD drive bays
Four (4) redundant hot-plug power supplies

System Fault Management and Diagnostics

HP ProLiant DL580 Gen8 offers advanced error recovery, component quarantine, fault tolerance and event reporting features to enable class-leading availability and rock-solid reliability that businesses can depend on. The DL580 Gen8 server firmware features advanced machine check architecture and memory fault tolerance capabilities that customers need for running their mission-critical applications. These advanced fault management features combine with quality components (HP Qualified Options) and extensive qualification to provide a high degree of system availability.

HP Advanced Error Recovery

Introduced with the HP ProLiant DL580 Gen8, HP Advanced Error Recovery enables applications to recover from uncorrectable errors found in processor, cache and memory during execution. The system firmware works with the operating system and/or hypervisor and/or end-application to enable the optimal recovery response so that the impact of the error can be avoided or minimized. Where such an error would have crashed the system in the past, with HP Advanced Error Recovery, the system can continue to function with limiting the impact of the error to a killed/re-started thread, process and/or virtual machine.

NOTE:

- Supported on Intel® E7-4800/8800 based systems only
- On select Operating Systems, Hypervisors and end-applications that support Intel Machine Check Architecture Recovery feature.
  - Windows Server 2012 R2 and Hyper-V 2012 R2
  - Windows Server 2012 (requires Microsoft hotfix 2901012) and Hyper-V 2012
  - Redhat Enterprise Linux 6.4
  - SLES 11 SP3

HP Memory Quarantine

HP Memory Quarantine Identifies memory regions containing uncorrectable hardware errors by using a patrol scrubber and isolates the bad memory location before it affects other data. If an error is found, the hardware attempts to correct it. If the hardware cannot correct the error, the platform firmware notifies the operating system. Depending on the state of the memory pages associated with the identified memory region, the OS or hypervisor may take those pages out of the available pool. If the memory pages are already committed to a virtual machine (VM), the OS or hypervisor may choose to shut down the associated VM (Guest OS) or cause a Machine Check Exception to the Guest OS. The associated VM (Guest OS) might in turn close down the affected thread or process or it might shut down on its own. You can restart the halted VM or process once you replace the bad memory at the server's next maintenance cycle.

NOTE:

- Supported on Intel® E7-4800/8800 based systems only
- On select Operating Systems, Hypervisors and end-applications that support Machine Check Architecture Recovery functionality.

- Windows Server 2012 R2 and Hyper-V 2012 R2
- Windows Server 2012 (requires Microsoft hotfix 2901012) and Hyper-V 2012
- Windows Server 2008 R2 and Hyper-V 2008 R2
- Windows Server 2008 and Hyper-V 2008
- Redhat Enterprise Linux 6.4
- SLES 11 SP3

HP Advanced Error Containment
The DL580 Gen8 features advanced PCIe error containment capability that prevents corrupted data propagation. If data corruption is found on the PCIe bus, the system re-sets the PCIe root port and re-starts the transaction. This feature helps protect customer data and prevents the error from creating a chain of failures across the datacenter.

NOTE:

- Supported on Intel® E7-4800/8800 based systems only

HP Advanced Fault Resiliency

- Double Data Device Correction (DDDC) - Detects and corrects up to two DRAM chip failures for every x4 DIMM in the server. DDDC requires memory lockstep mode and may impact performance to varying degrees depending on workload memory access characteristics.
  NOTE: Supported on Intel® E7-4800/8800 based systems only.
- Single Data Device Correction (SDDC) - Detects and corrects one DRAM chip failures for every x4 DIMM in the server. Further corrects single-bit errors after one DRAM chip failure. SDDC is supported in performance mode and does not impact system performance.
  NOTE: Supported on Intel® E7-4800/8800 based systems only.
- Online Memory Sparing - Tracks excessive number of correctable errors and copies the contents of an unhealthy rank to an available spare rank in advance of multi-bit or persistent single-bit failures that may result in future uncorrectable faults. Since a DIMM or a rank is needed to perform sparing, this technique reduces the total amount of available memory by the amount of memory used for sparing.
- Memory Mirroring - System maintains two copies of all data. If an uncorrectable memory error occurs, the system automatically retrieves the good data from the mirrored (redundant) copy. Memory Mirroring consumes 50% of the system memory capacity.

NOTE: Memory mirroring will be supported in a system firmware update post initial launch.

- Redundant Interconnects and Failover - The DL580 Gen8 system and Intel® Xeon® E7-4800/8800 v2 processors combine to provide a high degree of fault tolerance and failover capabilities for key processor-processor or memory-processor links or clocks.
- Hot-plug redundant power supplies and fans - The DL580 Gen8 server features N+N redundant power supplies and N+1 redundant fans to keep your system running in the unlikely case a power supply or fan malfunctions.

Standard Features

Memory
One of the following depending on Model

Type	HP SmartMemory
	DDR3 Registered (RDIMM) and Load Reduced (LRDIMM)
DIMM Slots Available	96 DIMM slots
Maximum	3TB (96 x 32GB)

NOTE: HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html
NOTE: LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server. **NOTE:** Depending on the memory configuration and processor model, the memory speed may run at 1600MHz, 1333MHz, or 1066MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.

Network Controller

HP ProLiant Gen8 servers offer a new flexible network technology - FlexibleLOMs, which offers customers a choice of 1Gb, 10Gb, or 10Gb base-T ethernet or converged networking in their embedded adapter.

HP Ethernet 1Gb 4-port 331FLR FIO Adapter
HP FlexFabric 10Gb 2-port 534FLR-SFP+ FIO Adapter
HP Ethernet 10Gb 2-port 560FLR-SFP+ FIO Adapter

NOTE: For additional details see the Networking Section of this document.

Expansion Slots

NOTE: Up to 9 slots supported; all full-length/full-height. Standard: 4 PCI-E 3.0 x8, 5 PCI-E 3.0 x16.

Processor	Expansion Slot #	Technology	Width	Connector Width*	Bus / Dev Number**	Form Factor	Notes
4	1	PCIe 3.0	x16	x16	C0/03/0	FH/FL	N/A
4	2	PCIe 3.0	x16	x16	C0/02/0	FH/FL	N/A
3	3	PCIe 3.0	x16	x16	80/03/0	FH/FL	N/A
3	4	PCIe 3.0	x8	x16	80/02/0	FH/FL	N/A
3	5	PCIe 3.0	x8	x16	80/02/1	FH/FL	N/A
2	6	PCIe 3.0	x16	x16	40/03/0	FH/FL	N/A
2	7	PCIe 3.0	x8	x16	40/02/0	FH/FL	N/A
2	8	PCIe 3.0	x8	x16	40/02/1	FH/FL	N/A
1	9	PCIe 3.0	x16	x16	00/03/0	FH/FL	N/A

NOTE: PCIe slot availability is dependent on the number of processors installed.
* Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.
** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).
FL= Full length; FH = Full height.

Standard Features

Storage Controller
One of the following depending on Model

HP Smart Array P830i/2G FBWC Controller

The Flash Backed Write Cache (FBWC) increases cache data retention capabilities from two days of existing battery backed write cache (BBWC) to infinite data retention.

- Delivers 12 Gb/s line rate performance
- Standard on all Models
- Supports HP Secure Encryption as an option
- Transportable data protection
- Increases overall controller performance

NOTE: Please refer to the HP Smart Array P830 Controller QuickSpecs for more information.

Internal Storage Devices

Hard Disk Drive Backplane	Internal SAS lower and upper backplanes supports up to ten SFF hard disk drives or solid state drives

NOTE: For CTO models, five (5) lower drive bays ship standard and five (5) upper drive bays can be ordered separately. For pre-configured models, please refer to the pre-configured models section below.

Diskette Drive	None
Optional Optical Drive	None
Hard Drives	None ship standard

Maximum Internal Storage

Hot Plug SFF SAS	12TB	10 x 1.2TB
Hot Plug SFF SAS SSD	8TB	10 x 800GB
Hot Plug SFF SATA SSD	8TB	10 x 800GB

Interfaces

Serial	1
Video	1 front; 1 rear
Network RJ-45	4
iLO 4 Remote Management	1
micro-SD Slot	1
USB 2.0 Ports	8 total: 2 front; 4 rear; 2 internal

Industry Standard Compliance

ACPI 2.0. Compliant
PCIE 2.0 Compliant
PXE Support
WOL Support
Physical Address Extension (PAE) Support
Microsoft® Logo certifications
USB 2.0 Support

Standard Features

Server Power Cords	Server ships with high-voltage server to PDU power cord **NOTE:** If customers require a power cord, they can check the power cord matrix for the appropriate sku. Please see the following power cord matrix for details: http://www.hp.com/go/powercordmatrix
Common Slot Power Supply One of the following depending on power requirements	HP 1500W Common Slot Platinum Plus Hot Plug Power Supply HP 1200W Common Slot Platinum Plus Hot Plug Power Supply **NOTE:** 1500W power supply supports high line voltage only **NOTE:** A minimum of two (2) power supplies are required. Four (4) 1500W power supplies offers N+N redundancy for highly loaded configurations. Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor. HP's Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HP Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HP CS power supplies are tested by the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus power supply program. HP CS power supply options provide efficiency ratings of up to 94% (80 Plus Platinum) and are available in three power output options - 460W, 750W, and 1200W - allowing the customer to "right-size" a power supply for their specific server configuration. All HP Common Slot power sources are UL, CE Mark Compliant, hot-plug and support redundant configurations. HP CS Platinum Plus power supplies are required when enabling HP's Intelligent Power Discovery (IPD) solution. IPD is the first technology to create an automated, energy-aware network between IT systems and facilities. This allows your company to reclaim millions of dollars in wasted power capacity and downtime costs across data centers. For more information on HP's IPD solution, go to www.hp.com/go/ipd. **NOTE:** Mixing of power supplies in the same server is not supported. All power supplies must be of the same output and efficiency rating. If non-matched power supplies are inserted you will get errors and operation will fail.
System Fans	Four Hot Plug redundant fans standard (3+1)
Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) VMware **NOTE:** For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/ossupport and our driver download page http://www.hp.com/support/DL580Gen8

Standard Features

Graphics	Integrated Matrox G200 video standard 1280 x 1024 (32 bpp) 1920 x 1200 (16 bpp) HP iLO 4 On System Management Memory 16 MB Flash 256 MB DDR 3 with ECC (112 MB after ECC and video)
Form Factor	4U rack
HP Server ROM	HP ROM (Read Only Memory) is now digitally signed using HP's Corporate Signing Service. This signature is verified before the flash process starts, reducing accidental programming and preventing malicious efforts to corrupt system ROM. HP ROM provides for essential initialization and validation of hardware components before control is passed to the customer-installed operating system. The ROM also provides the capability of booting from various fixed media (HDD, CD-ROM) and removable media (USB), to continue operation to the operating system. HP ROM performs very early configuration of the video controller, to allow monitoring of initialization progress via an attached monitor. If configuration or hardware errors are discovered during this early phase of hardware initialization, suitable messages are now displayed on the connected monitor. Additionally, these configuration or hardware errors are logged to the Integrated Management Log (IML) to assist in diagnosis. HP's ProLiant ROM is used to configure the following: ● Processor and chipset status registers ● System memory, memory map, and memory initialization ● System hardware configuration (Integrated PCI devices and optional PCIe cards). ● Customer-specific BIOS configuration (using the HP ROM-Based Setup Utility (RBSU). **NOTE:** For further information, please refer to HP's RBSU (ROM based setup utility) user guide: www.hp.com/support/rbsu.

Standard Features

UEFI ROM	Legacy Mode or Unified Extensible Firmware Interface (UEFI) Mode	HP's ProLiant System BIOS is an EDK2 UEFI solution, and adheres to the latest revisions of UEFI Class 2 specifications which supports both legacy boot and UEFI boot operation. The HP ProLiant DL580 Gen8 defaults to legacy boot operation and can be factory or field configured for UEFI boot operation. **NOTE:** For UEFI boot operation, boot environment and OS image installations should be configured properly to support UEFI. To modify the server configuration ROM default settings, press F9 in the HP ProLiant POST screen to enter the UEFI System Utilities screen. By default, the System Utilities menus are in the English language. UEFI enables numerous new capabilities, including both industry standard functionality and features specific to HP ProLiant servers. Following are some of the features that UEFI enables and that the HP ProLiant DL580 Gen8 can support when configured for UEFI boot operation: ● Secure Boot - A new feature in which the system firmware, option card firmware, operating systems, and software collaborate to greatly enhance platform security. ● Operating system specific functionality - Microsoft Windows 2012 supports several features only when installed in UEFI mode. ● Support for > 2.2 TB (using GPT) boot drives - Such drives could previously only be used for boot drives when using RAID solutions such as HP Smart Array. ● UEFI Shell - Provides a pre-boot environment for running scripts and tools. The HP ProLiant UEFI Shell provides both standard capabilities as well as numerous enhancements. ● PXE boot support for IPv6 networks. ● PXE Multicast Boot allowing for faster PXE deployments for large numbers of servers. ● Boot support for option cards that only support a UEFI option ROM. **NOTE:** For more information on HP's ProLiant System BIOS and UEFI, see the UEFI Information Library: http://www.hp.com/go/uefi/docs.
Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) VMware	**NOTE:** For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/ossupport and our driver download page http://www.hp.com/support/DL580Gen8

Standard Features

On System Management	HP iLO Management	HP iLO Management is a comprehensive set of embedded management features supporting the complete lifecycle of the server, from initial deployment, through ongoing management, to service alerting and remote support. HP iLO Management Engine comes standard on all HP ProLiant Gen8 servers. The HP iLO Management portfolio includes: **HP iLO:** The HP iLO (Integrated Lights-Out) management processor is the core foundation for the HP iLO Management Engine **HP Agentless Management:** Provides built in server health monitoring and alerting capability without OS agents, that starts working the moment a power cord and an Ethernet cable are connected. **HP Active Health System:** Always on, continuous monitoring for increased stability and shorter downtimes; 100% configuration history; Health and service alerts and easy export and upload to Service and Support. **HP Intelligent Provisioning:** Lets customers provision and configure a single server without any separate media. To start Intelligent Provisioning: Press the F10 key during the ProLiant Gen8 server boot Process. Please go to the Intelligent Provisioning website at www.hp.com/go/intelligentprovisioning for additional information and to view usage videos. Use the Service Pack for ProLiant (SPP) at www.hp.com/go/spp to get firmware and software updates. **HP iLO Mobile App:** Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: www.hp.com/go/ilo/mobileapp **NOTE:** For more information, visit: http://www.hp.com/go/ilo or HP iLO Management Engine technologies whitepaper
HP Insight Management	HP Service Pack for ProLiant	HP Service Pack for ProLiant (SPP) and HP Smart Update Manager (HP SUM) provide a comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new HP server hardware launches. By enabling firmware to be updated online and integrating firmware and system software updates in one operation, HP SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire BladeSystem enclosures. Further improving system uptime and stability is the fact that HP provides 12 months of support for each Service Pack for ProLiant release. The user experience around HP SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HP SUM and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download time. The HP SUM application provides a straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared repositories which can be easily updated

from hp.com, HP SUM provides the tools to optimize stability and consistency throughout the company. While HP SUM and the SPP recommend the combinations of firmware and system software that HP has found to be the best practice, the application gives customers the flexibility to set their own specific baseline.

The Service Pack for ProLiant has been rigorously tested with specific attention for interaction between firmware, drivers and agents both within the server as well as in interaction with the BladeSystem enclosure components (Onboard Administrator and Virtual Connect). This testing ensures the highest quality as well as providing the input for HP SUM to deploy updates taking into account all interdependencies, when determining the correct updates and order of update deployment.

NOTE: The Service Pack for ProLiant (which includes HP SUM) can be downloaded from www.hp.com/go/spp/download. More information can be found: http://www.hp.com/go/SmartUpdate, www.hp.com/go/spp and http://www.hp.com/go/hpsum

Intelligent Manageability

HP Systems Insight Manager
SmartStart
Redundant ROM
Remote Flash ROM
Management Agents
Integrated Management Log (IML)
Automatic Server Recovery-2 (ASR-2)
ROM-Based Setup Utility (RBSU)
Dynamic Sector Repairing (with Smart Array Controllers)
Drive Parameter Tracking (with Smart Array Controllers)
Pre-Failure Warranty (covers processors, SAS hard drives and memory)
Redundant/adaptive load balancing NIC Support
Hot Spare Boot

NOTE: Upon the event of a failed processor in a multi-processing environment, the system will automatically reboot and use the remaining good processor(s).

HP Insight Online

HP Insight Online is a new capability available through the HP Support Center portal for one stop, secure access to product and HP support information specific to your IT environment. Insight Online can automatically display devices remotely monitored by HP Insight Remote Support. With Insight Online's easy navigation you can efficiently track your IT support contracts and device status from anywhere and at any time. www.hp.com/go/insightonline

Standard Features

HP Proactive Insight experience	Prevent problems with innovative, automated monitoring tools and proactive services. The HP Proactive Insight experience consists of using Insight Online, Insight Remote Support, and Proactive Care Support Service as one integrated solution. The Proactive Insight experience provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit: www.hp.com/go/proactiveinsightexperience
Security	Power-on password Keyboard password External USB port enable/disable Network Server Mode Serial interface control Administrator's password Trusted Platform Module (TPM) Intel® Secure Key HP Secure Encryption (Smart Array Controller) HP Advanced Data Guard (Smart Array Controller)
Warranty	This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details. **NOTE:** Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Optional Features

HP Insight management	HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see http://www.hp.com/go/insightcontrol. HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, see: http://www.hp.com/services/insight.
	HP iLO Advanced	HP Integrated Lights-Out Advanced License a product option, providing smart remote server management without compromise. iLO Advanced unlocks the full set of remote administration functionality for all HP ProLiant servers by activating the full Virtual Keyboard Video and Mouse remote console, multi-user collaboration, console record and replay, GUI-based and scripted virtual media and virtual folders, and enhanced security and power management functionality. For more information, see: http://www.hp.com/go/iloadvance
	HP Matrix Operating Environment	The HP Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business. The HP Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HP CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS). **NOTE:** For more information, visit: http://www.hp.com/go/matrixoe
High Performance Clusters	HP Cluster Platforms	HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. http://www.hp.com/go/clusters
	HP HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. http://www.hp.com/techservers/clusters/ucp/index.html
	HP Insight Cluster Management Utility	HP Insight Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used for lifecycle management of hyperscale clusters of Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. http://www.hp.com/go/cmu

Optional Features

Storage Software

Whether you need to solve a specific data protection, archiving, or storage command and control challenge, or deliver on strategic consolidation, compliance, or continuity initiatives, look no further than HP storage software. Our storage software helps you reduce costs, simplify storage infrastructure, protect vital assets and respond faster to business opportunities.

Storage software that gets the job done:

- **Data Protection and Recovery Software**
  Whether you're a large enterprise or a smaller business, HP data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- **Data Archive and Migration Software**
  HP's storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.
- **Storage Resource Management Software (SRM)**
  HP's storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.
- **Data Replication Software**
  HP offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.
- **Storage Device Management Software**
  Maximize your investment in HP storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.
- **HP StoreVirtual VSA**
  With HP StoreVirtual VSA you can use the power of virtualization to turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

NOTE: For more information available Storage Software including QuickSpecs, please see: www.hp.com/go/storage/software.

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: http://www.hp.com/go/factory-express.

Optional Features

HP Simple Configurator

SCE is a guided self-service tool to help sales and non-technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact HP's Customer Business Center or an Authorized Partner for assistance. http://www.hp.com/products/configurator

Service and Support

HP Technology Services for Industry Standard Servers and BladeSystem
Capitalizing on HP ProLiant server capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.

Protect your business beyond warranty with HP Care Pack Services
HP Care Pack services offer complete care and support expertise with committed response choices designed to meet your IT and business needs.

HP Foundation Care services offer scalable reactive support-packages for HP servers and software. You can choose the type and level of service that is most suitable for your IT and business needs. HP Proactive Care delivers high levels of system availability through proactive service management and advanced technical response.

Recommended HP Care Pack Services for your HP product

Optimized Care

3-Year HP 6 hour Call to Repair Response, Proactive Care
Combined reactive and proactive support for hardware and software helping optimize your systems and delivering high levels of availability through proactive service management and advanced technical response. Hardware problem resolution to return the hardware in operating condition within 6 hours of the initial service request. A Technical Solution Specialist, as your single point of contact, will own your call or issue end to end until resolved.
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855EEE.pdf

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN

Standard Care

3-Year HP 24x7 4 hour response, Proactive Care Service
This service gives you combined reactive and proactive support including rapid access to our Advanced Solution Center to manage and prevent problems and a Technical Support Specialist with a broad level of technical knowledge that will engage with additional technical expertise as needed from HP's vast global resources.
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855EEE.pdf

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN

Related Services

HP Proactive Care Personalized Support - Environmental Option
The Personalized Support option provides an assigned Account Support Manager who can bring best practices from across the industry plus extra technical skills to your IT team. This option is only available as an add-on to HP Proactive Care Support.

HP Proactive Select Service
Provides a flexible way to purchase HP best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN.pdf

HP Installation and Startup for HP Insight Control

Service and Support

HP Installation and Startup Service for HP Insight Control provides for the deployment and basic configuration of HP Insight Control software on a single central management server (CMS) for HP ProLiant. Only one instance of this service is required per CMS.
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

HP Installation and Startup for HP Systems Insight Manager
Provides for installation and configuration of the latest version of HP Systems Insight Manager, together with the installation and startup of HP Service Essentials Remote Support Pack. Only one instance of this service is required per CMS.
http://h20195.www2.hp.com/v2/GetPDF.aspx/5982-4143EN.pdf

Additional HP Care Pack services can be found at: http://www.hp.com/go/cpc

Insight Online/Insight Remote Support

HP Insight Remote Support provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. This comes at no additional cost with your HP solution. Learn more about Insight Remote Support http://www.hp.com/go/insightremotesupport and Insight Online http://www.hp.com/go/insightonline
NOTE: Insight Remote Support is a prerequisite for Proactive Care

HP Support Center

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more http://www.hp.com/go/hpsc

HP's Support Center Mobile App allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalize IT support anywhere, anytime.
HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

NOTE: HP Support Center Mobile App is subject to local availability.

Parts and Materials

HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction.

For more information

To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant

Pre-configured Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.
NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.

High Performance Models

HP ProLiant DL580 Gen8 E7-4890v2 4P 128GB-R P830i SAS 5 SFF 1500W RPS Server
728544-001

Processor(s)	(4) Intel® Xeon® E7-4890v2 (2.8GHz/15-core/37.5MB/155W) Processors
Cache Memory	37.5MB (1 x 37.5MB) Level 3 cache
Memory	128GB (16 x 8GB DIMMs) PC3-14900R DIMMs (DDR3) installed in (8) Memory Cartridges
IO Expansion	(9) PCIe Gen3.0 I/O Expansion slots (5 x16 slots; 4 x8 slots)
Network Controller	HP FlexFabric 10Gb 2P 534FLR-SFP+ Adapter
Storage Controller	HP Smart Array P830i/2GB FBWC 12 Gbps SAS controller
Bays and Hard Drives	Ten (10) SFF HDD/SSD drive bays. No drives ship standard
Optical Drive	None
Power Supply	(4) HP 1500W Common Slot Platinum Plus Hot Plug Power Supplies
Fans	Four Hot Plug redundant fans standard (3+1)
Integrated Lights Out	Integrated Lights-Out 4 (iLO 4) ships standard
Insight Control	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
Form Factor	Rack 4U (rail kit is included)
BIOS	Legacy BIOS (default) or UEFI BIOS (field configurable)
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Pre-configured Models

HP ProLiant DL580 Gen8 E7-4850v2 4P 128GB-R P830i/2G 534FLR-SFP+ 1500W RPS Svr 728546-001	**Processor(s)**	(4) Intel® Xeon® E7-4850v2 (2.3GHz/12-core/24MB/105W) Processors
	Cache Memory	24MB (1 x 24MB) Level 3 cache
	Memory	128GB (16 x 8GB DIMMs) PC3-14900R DIMMs (DDR3) installed in (8) Memory Cartridges
	IO Expansion	(9) PCIe Gen3.0 I/O Expansion slots (5 x16 slots; 4 x8 slots)
	Network Controller	HP FlexFabric 10Gb 2P 534FLR-SFP+ Adapter
	Storage Controller	HP Smart Array P830i/2GB FBWC 12 Gbps SAS controller
	Bays and Hard Drives	Ten (10) SFF HDD/SSD drive bays. No drives ship standard
	Optical Drive	None
	Power Supply	(4) HP 1500W Common Slot Platinum Plus Hot Plug Power Supplies
	Fans	Four Hot Plug redundant fans standard (3+1)
	Integrated Lights Out	Integrated Lights-Out 4 (iLO 4) ships standard
	Insight Control	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
	Form Factor	Rack 4U (rail kit is included)
	BIOS	Legacy mode (default) or UEFI BIOS (field configurable)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Base Models

HP ProLiant DL580 Gen8 E7-4809v2 2P 64GB-R P830i/2G 331FLR 1200W PS Server 728547-001	**Processor(s)**	(2) Intel® Xeon® E7-4809v2 (1.9GHz/6-core/12MB/105W) Processors
	Cache Memory	12MB (1 x 12MB) Level 3 cache
	Memory	64GB (8 x 8GB DIMMs) PC3-14900R DIMMs (DDR3) installed in (4) Memory Cartridges
	IO Expansion	(9) PCIe Gen3.0 I/O Expansion slots (5 x16 slots; 4 x8 slots) **NOTE:** PCIe slot availability is dependent on the number of processors installed. Please refer to the expansion slots section for more details.
	Network Controller	HP Ethernet 1Gb 4P 331FLR Adptr
	Storage Controller	HP Smart Array P830i/2GB FBWC 12 Gbps SAS controller
	Bays and Hard Drives	Five (5) lower drive bays. No drives ship standard
	Optical Drive	None
	Power Supply	(2) HP 1200W Common Slot Platinum Plus Hot Plug Power Supplies
	Fans	Four Hot Plug redundant fans standard (3+1)
	Integrated Lights Out	Integrated Lights-Out 4 (iLO 4) ships standard
	Form Factor	Rack 4U (rail kit is included)
	BIOS	Legacy BIOS (default) or UEFI BIOS (field configurable)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Smart Buys

HP ProLiant DL580 Gen8 E7-4830v2 2P 64GB-R P830i/2G 531FLR 1200W RPS Svr 746081-S01	**Processor(s)**	(2) Intel® Xeon® E7-4830v2 (2.2GHz/10-core/20MB/105W) Processors
	Cache Memory	20MB (1 x 20MB) Level 3 cache
	Memory	64GB (8 x 8GB DIMMs) PC3-14900R DIMMs (DDR3) installed in (8) Memory Cartridges
	IO Expansion	(9) PCIe Gen3.0 I/O Expansion slots (5 x16 slots; 4 x8 slots) **NOTE:** Slots 6-9 enabled by default, slots 1-5 require 4-sockets populated
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P830i/2GB FBWC 12 Gbps SAS controller
	Bays and Hard Drives	Five (5) SFF drive bays, upgradeable to ten (10). No drives ship standard
	Optical Drive	None
	Power Supply	(2) HP 1200W Common Slot Platinum Plus Hot Plug Power Supplies
	Fans	Four Hot Plug redundant fans standard (3+1)
	Integrated Lights Out	Integrated Lights-Out 4 (iLO 4) ships standard
	Form Factor	Rack 4U (rail kit is included)
	BIOS	Legacy BIOS (default) or UEFI BIOS (field configurable)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

HP ProLiant DL580 Gen8 E7-4870v2 2P 64GB-R P830i/2G 531FLR 1200W RPS Svr 746080-S01	**Processor(s)**	(2) Intel® Xeon® E7-4870v2 (2.3GHz/15-core/30MB/130W) Processor
	Cache Memory	30MB (1 x 30MB) Level 3 cache
	Memory	64GB (8 x 8GB DIMMs) PC3-14900R DIMMs (DDR3) installed in (4) Memory Cartridges
	IO Expansion	(9) PCIe Gen3.0 I/O Expansion slots (5 x16 slots; 4 x8 slots) **NOTE:** Slots 6-9 enabled by default, slots 1-5 require 4-sockets populated
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P830i/2GB FBWC 12 Gbps SAS controller
	Bays and Hard Drives	Five (5) SFF drive bays, upgradeable to ten (10). No drives ship standard
	Optical Drive	None
	Power Supply	(2) HP 1200W Common Slot Platinum Plus Hot Plug Power Supplies
	Fans	Four Hot Plug redundant fans standard (3+1)
	Integrated Lights Out	Integrated Lights-Out 4 (iLO 4) ships standard
	Form Factor	Rack 4U (rail kit is included)
	BIOS	Legacy BIOS (default) or UEFI BIOS (field configurable)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Configuration Information - Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.
NOTE: Factory Integrated Models must start with a CTO Server
NOTE: FIO indicates that this option is only available as a factory installable option.

Step 1: Base Configuration

HP Models

HP ProLiant DL580 Gen8 Configure-to-order Server 728551-B21

Factory Integrated Models ship with:

4U Server Chassis with front-accessible processor and memory drawer
Intel® 602J Chipset
Embedded HP Smart Array 12 G P830i/2G FBWC Controller
(5) Hot-plug SAS/SATA SFF SSD or HDD Bays (Lower)
(9) PCIe Gen3.0 I/O Expansion slots (5 x16 slots; 4 x8 slots)
(8) USB 2.0 ports (2 front, 4 rear, 2 internal)
(2) video ports (1 front, 1 rear)
(1) microSD card slot
(1) Trusted Platform Module (TPM) connector
(4) Hot-plug redundant fans standard, front accessible
BIOS Legacy mode(default) or Unified Extensible Firmware Interface (UEFI) mode (Optional)
HP Integrated Lights-Out 4 (iLO4) standard management
HP iLO4 Embedded Remote Support Technology
HP Insight Control Server Provisioning
HP Insight Online
HP Active Health System
System Insight Display
Rack rails and mounting hardware
NOTE: PCIe slot availability is dependent on the number of processors installed. Please refer to the "Expansion slots" section for more details.
NOTE: A minimum of two processors are required. The system may have three and four processors installed.
NOTE: A minimum of two memory cartridges are required (one per processor).
NOTE: A minimum of two memory DIMMs are required per cartridge (minimum of four DIMMs per server).
NOTE: A minimum of two power supplies are required.

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

HP Processors

NOTE: If more than two processors are desired, select one xxxxxx-L21 and additional processors would be xxxxxx-B21.

Fifteen-Core Processors

HP DL580 Gen8 Intel® Xeon® E7-4890v2 (2.8GHz/15-core/37.5MB/155W) FIO Processor Kit 728955-L21

HP DL580 Intel® Xeon® E7-4880v2 (2.5GHz/15-core/37.5MB/130W) FIO Processor Kit 728957-L21

	HP DL580 Gen8 Intel® Xeon® E7-4870v2 (2.3GHz/15-core/30MB/130W) FIO Processor Kit	728959-L21
	HP DL580 Gen8 Intel® Xeon® E7-4870v2 (2.3GHz/15-core/30MB/130W) Processor Kit/S-Buy	728959-S21
	HP DL580 Gen8 Intel® Xeon® E7-8880Lv2 (2.2GHz/15-core/37.5MB/105W) FIO Processor Kit	728953-L21
	Twelve-Core Processors	
	HP DL580 Gen8 Intel® Xeon® E7-4860v2 (2.6GHz/12-core/30MB/130W) FIO Processor Kit	728963-L21
	HP DL580 Gen8 Intel® Xeon® E7-4850v2 (2.3GHz/12-core/24MB/105W) FIO Processor Kit	728965-L21
	HP DL580 Gen8 Intel® Xeon® E7-8857v2 (3.0GHz/12-core/30MB/130W) FIO Processor Kit	728961-L21
	HP DL580 Gen8 Xeon® E7-8891v2 (3.2GHz/10-core/37.5MB/155W) FIO Processor Kit	728967-L21
	Eight-Core Processors	
	HP DL580 Gen8 Xeon® E7-4830v2 (2.2GHz/10-core/20MB/105W) FIO Processor Kit	728969-L21
	HP DL580 Gen8 Intel® Xeon® E7-4830v2 (2.2GHz/10-core/20MB/105W) Processor Kit/S-Buy	728969-S21
	HP DL580 Gen8 Intel® Xeon® E7-4820v2 (2.0GHz/8-core/16MB/105W) FIO Processor Kit	728971-L21
	Six-Core Processors	
	HP DL580 Gen8 Intel® Xeon® E7-4809v2 (1.9GHz/6-core/12MB/105W) FIO Processor Kit	728975-L21
	HP DL580 Gen8 Intel® Xeon® E7-8893v2 (3.4GHz/6-core/37.5MB/155W) FIO Processor Kit	728973-L21
	NOTE: A minimum of two processors are required. The system may have three and four processors installed.	

HP Memory	**NOTE:** HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html **NOTE:** LRDIMM, RDIMM, UDIMM, and HDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support LRDIMM, RDIMM and UDIMMs. **NOTE:** Must select a minimum quantity of two memory kits.	
	Registered DIMMs (RDIMMs)	
	HP 4GB (1x4GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708637-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713981-B21
	HP 8GB (1x8GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	731761-B21
	HP 8GB (1x8GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	731765-B21

Configuration Information - Factory Integrated Models

	HP 16GB (1x16GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708641-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713985-B21
	Load Reduced DIMMs (LR DIMMS)	
	HP 32GB (1x32GB) Quad Rank x4 PC3-14900L (DDR3-1866) Load Reduced CAS-13 Memory Kit	708643-B21
	Memory Expansion Options	
	HP DL580 Gen8 12 DIMM Slots Memory Cartridge **NOTE:** Up to Eight (8) memory cartridges are supported for 96 DIMM slots **NOTE:** A minimum of two memory cartridges are required (one per processor). **NOTE:** A minimum of two memory DIMMs are required per cartridge (minimum of four DIMMs per server).	732411-B21
HP Networking	**FlexibleLOM Adapters** **NOTE:** Only one FlexibleLOM can be added to the server. These options are upgradeable and can be changed from the original configuration after the server is shipped. **NOTE:** For 10Gb adapters, a minimum of two Gigabytes (2 GB) of server memory is required per each adapter.	
	HP Ethernet 1Gb 4-port 331FLR FIO Adapter	684208-B21
	HP FlexFabric 10Gb 2-port 534FLR-SFP+ FIO Adapter	700752-B21
	HP Ethernet 10Gb 2-port 560FLR-SFP+ FIO Adapter	684218-B21
FBWC Upgrade for embedded P830i Controller	HP 2GB FIO Flash Backed Write Cache	758836-B21
	HP 4GB FBWC FIO Kit for P-series SA	698537-B21
HP Power Supplies	**NOTE:** Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.	
	HP Common Slot Platinum Plus Power Supply Kits **NOTE:** 94% efficiency with support for HP Power Discovery Services.	
	HP 1500W Common Slot Platinum Plus Hot Plug Power Supply Kit	684532-B21
	HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21
	NOTE: Minimum of two (2) power supplies are required. All power supplies in a server should match. Mixing Power Supplies is not supported. **NOTE:** Option Kits contain the specified power supply and a PDU IEC cable. **NOTE:** 1500W Power Supplies only support High Line Voltage. **NOTE:** HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to www.hp.com/products/powercords	

Configuration Information - Factory Integrated Models

Storage Controller FBWC	HP 2G FIO Flash Backed Write Cache	758836-B21
	NOTE: 2G Flash Backed Write Cache is required for P830i SAS Controller	

Step 3: Choose Additional Factory Integratable Options

Converged Infrastructure Management Software	HP OneView with iLO Advanced - Server hardware required on same purchase order	
	HP OneView for ProLiant DL Server incl 3yr 24x7 Supp FIO Bundle Physical 1 Svr Lic	E5Y43A
	NOTE: OneView is supported in Legacy BIOS mode only.	
HP Insight Software	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	C6N36A

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options" and "Additional Options" section below.

Core Options

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Processors	**Fifteen-Core Processors**	
	HP DL580 Gen8 Intel® Xeon® E7-4890v2 (2.8GHz/15-core/37.5MB/155W) Processor Kit	728955-B21
	HP DL580 Gen8 Intel® Xeon® E7-4880v2 (2.5GHz/15-core/37.5MB/130W) Processor Kit	728957-B21
	HP DL580 Gen8 Intel® Xeon® E7-4870v2 (2.3GHz/15-core/30MB/130W) Processor Kit	728959-B21
	HP DL580 Gen8 Intel® Xeon® E7-8880Lv2 (2.2GHz/15-core/37.5MB/105W) Processor Kit	728953-B21
	Twelve-Core Processors	
	HP DL580 Gen8 Intel® Xeon® E7-4860v2 (2.6GHz/12-core/30MB/130W) Processor Kit	728963-B21
	HP DL580 Gen8 Intel® Xeon® E7-4850v2 (2.3GHz/12-core/24MB/105W) Processor Kit	728965-B21
	HP DL580 Gen8 Intel® Xeon® E7-8857v2 (3.0GHz/12-core/30MB/130W) Processor Kit	728961-B21
	HP DL580 Gen8 Intel® Xeon® E7-8891v2 (3.2GHz/10-core/37.5MB/155W) Processor Kit	728967-B21
	Eight-Core Processors	
	HP DL580 Gen8 Intel® Xeon® E7-4830v2 (2.2GHz/10-core/20MB/105W) Processor Kit	728969-B21
	HP DL580 Gen8 Intel® Xeon® E7-4820v2 (2.0GHz/8-core/16MB/105W) Processor Kit	728971-B21
	Six-Core Processors	
	HP DL580 Gen8 Intel® Xeon® E7-4809v2 (1.9GHz/6-core/12MB/105W) Processor Kit	728975-B21
	HP DL580 Gen8 Intel® Xeon® E7-8893v2 (3.4GHz/6-core/37.5MB/155W) Processor Kit	728973-B21
	NOTE: A minimum of two processors are required. The system may have three and four processors installed.	

HP Memory	**NOTE:** HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html **NOTE:** LRDIMM, RDIMM, UDIMM, and HDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support LRDIMM, RDIMM and UDIMMs.	
	Registered DIMMs (RDIMMs)	
	HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713981-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit/S-Buy	713981-S21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713985-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit/S-Buy	713985-S21
	HP 4GB (1x4GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708637-B21

Core Options

	HP 4GB (1X4GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit/S-Buy	708637-S21
	HP 8GB (1x8GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	731765-B21
	HP 8GB (1x8GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit/S-Buy	731765-S21
	HP 8GB (1x8GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	731761-B21
	HP 8GB (1x8GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit/S-Buy	731761-S21
	HP 16GB (1x16GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708641-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit/S-Buy	708641-S21
	HP 32GB (1x32GB) Quad Rank x4 PC3-14900L (DDR3-1866) Load Reduced CAS-13 Memory Kit	708643-B21
	HP 32GB (1x32GB) Quad Rank x4 PC3-14900L (DDR3-1866) Load Reduced CAS-13 Memory Kit/S-Buy	708643-S21
	Memory Expansion Options	
	HP DL580 Gen8 12 DIMM Slots Memory Cartridge **NOTE:** Up to Eight (8) memory cartridges are supported for 96 DIMM slots **NOTE:** A minimum of two memory cartridges are required (one per processor). **NOTE:** A minimum of two memory DIMMs are required per cartridge (minimum of four DIMMs per server).	732411-B21
HP Optical Drives	HP Mobile USB Non Leaded System DVD RW Drive	701498-B21
HP Hard Drives	**NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components. **NOTE:** Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.	
	SAS Hot Plug with SmartDrive SFF (2.5-inch) Enterprise Drives	
	HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive	718162-B21
	HP 1.2TB 6G SAS 110K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive/S-Buy	718162-S21
	HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
	HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive/S-Buy	652589-S21
	HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
	HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive/S-Buy	652583-S21
	HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
	HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21

HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive/S-Buy	652564-S21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652611-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive/S-Buy	652611-S21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-S21
SAS Hot Plug SmartDrive SFF (2.5-inch) Midline Drives	
HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18004.www1.hp.com/products/quickspecs/12244_na/12244_na.html	
6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Boot Solid State Drives	
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	717965-B21
HP 80GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	734360-B21
6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives	
HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717973-B21
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717971-B21
HP 600GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	739898-B21
HP 300GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	739888-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717969-B21
6G SATA ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
HP 800GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691868-B21
HP 400GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691866-B21
HP 200GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691864-B21
HP 100GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691862-B21
12G SAS Enterprise Performance and Mainstream Solid State Drives	
HP 800GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive	741159-B21
HP 400GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive	741155-B21
HP 200GB 12G SAS High Endurance SFF 2.5-in SC Enterprise Performance 3yr Wty Solid State Drive	741151-B21

Core Options

	HP 800GB 12G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	741146-B21
	HP 400GB 12G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	741142-B21
	HP 200GB 12G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	741138-B21
	6G SAS ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
	HP 800GB 6G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	690829-B21
	HP 400GB 6G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	690827-B21
	HP 200GB 6G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	690825-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14038_na/14038_na.html	
	Hard Drive Option Kits	
	HP ProLiant DL580 Gen8 5 Small Form Factor Drive Backplane Cage Kit	739405-B21
	HP SFF Gen8 Hard Drive Blank Kit	666987-B21
	HP DL580 Gen8 SAS Cable Kit **NOTE:** This cable is required when ordering one of these Smart Array Controllers for a PCIe slot.	748916-B21
	HP Smart Array P830/4GB FBWC 6Gb 2-ports Int SAS Controller	698533-B21
	HP Smart Array P430/4GB FBWC 6Gb 1-port Int SAS Controller	698530-B21
	HP Smart Array P430/2GB FBWC 6Gb 1-port Int SAS Controller	698529-B21
HP Networking	**Gigabit Ethernet Adapters**	
	HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
	10 Gigabit Ethernet Adapters **NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.	
	HP Ethernet 10Gb 2P 530SFP+ Adapter	652503-B21
	HP Ethernet 10Gb 2P 560SFP+ Adapter	665249-B21
	HP Ethernet 10Gb 2-port 530T Adapter	656596-B21
	FlexibleLOM Adapters	
	HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B21
	HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
	HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
	NOTE: Both Legacy BIOS and UEFI BIOS mode are supported	
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs	

Core Options

HP Power Supplies	**NOTE:** Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.	
	HP Common Slot Platinum Plus Power Supply Kits	
	NOTE: 94% efficiency with support for HP Power Discovery Services.	
	HP 1500W Common Slot Platinum Plus Hot Plug Power Supply Kit	684532-B21
	HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21
	NOTE: All power supplies in a server should match. Mixing Power Supplies is not supported. **NOTE:** Option Kits contain specified power supply and PDU IEC cable. **NOTE:** 1500W Power Supplies only support High Line Voltage. **NOTE:** HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to www.hp.com/products/powercords	
Auxiliary Power Cables	HP DL580/DL585/DL980 Power Cable Kit	631660-B21
	NOTE: Order with HP IO Accelerator Duo cards or GPGPUs for providing additional power to the IO cards.	

Additional Options

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Insight Software	**HP Insight Control**	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	C6N27A
	HP Insight Control Server Provisioning Media Kit	BD883A
	HP Insight Management Media Kit	C6N31A
	HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License	T9082AAE
	HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License	452151-B21
	NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key. **NOTE:** Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. **NOTE:** Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates. **NOTE:** For additional license options please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_na/12631_na.html	
	HP Integrated Lights-Out (iLO) Advanced for ProLiant	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
	HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A
	NOTE: For additional license options please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/14276_na/14276_na.html **NOTE:** For more information, visit: http://www.hp.com/go/ilo	
Converged Infrastructure Management Software	**HP OneView**	
	HP OneView with iLO Advanced	
	HP OneView Media Kit Phys No Lic	E5Y37A
	HP OneView incl 3yr 24x7 Supp Phys 1 Svr Lic	E5Y34A
	HP OneView incl 3yr 24x7 Supp Flex Qty E-LTU	E5Y35AAE
	HP OneView without iLO Advanced	
	HP OneView w/o iLO Adv incl 3yr 24x7 Supp Phys 1 Svr Lic	E5Y38A
	HP OneView w/o iLO Adv inc 3yr 24x7 Supp Flex Qty E-LTU	E5Y39AAE
	NOTE: OneView is supported in Legacy BIOS mode only Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14621_na/14621_na.html	

Additional Options

HP I/O Accelerator Options	**Second Generation Accelerators**	
	HP 365GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673642-B21
	HP 785GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673644-B21
	HP 1205GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673646-B21
	HP 2410GB Multi Level Cell G2 PCIe ioDrive2 Duo for ProLiant Servers	673648-B21
	HP 3TB G2 FH/HL PCIe ioDrive2 IO Accelerator for ProLiant Servers	721458-B21
	NOTE: Both Legacy and UEFI BIOS modes are supported. Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13587_na/13587_na.html	
HP Storage Controllers	**SAS Controllers**	
	Smart Array P430 Controller	
	HP Smart Array P430/2GB FBWC 12Gb 1-port Int SAS Controller	698529-B21
	HP Smart Array P430/4GB FBWC 12Gb 1-port Int SAS Controller	698530-B21
	Smart Array P431 Controller	
	HP Smart Array P431/2GB FBWC 12Gb 2-ports Ext SAS Controller	698531-B21
	HP Smart Array P431/4GB FBWC 12Gb 2-ports Ext SAS Controller	698532-B21
	Smart Array P830 Controller	
	HP Smart Array P830/4GB FBWC 12Gb 2-ports Int SAS Controller	698533-B21
	Optional Upgrades	
	HP 4GB P-series Smart Array Flash Backed Write Cache FIO Kit	698537-B21
	HP Smart Array 2GB FIO Flash Backed Write Cache	758836-B21
	HP SmartCache No Media 24x7 Technical Support 1 Svr License	D7S26A
	HP SmartCache No Media 24x7 Technical Support Flexible License	D7S27A
	HP SmartCache No Media 24x7 Technical Support Electronic License	D7S27AAE
	NOTE: A maximum of four HP Smart Array Controllers (including embedded controller) can be installed **NOTE:** For more information about HP SmartCache, go to www.hp.com/go/smartcache **NOTE:** Both Legacy and UEFI BIOS modes are supported	
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14624_na/14624_na.html (Smart Array P430 Controller) http://h18000.www1.hp.com/products/quickspecs/14625_na/14625_na.html (Smart Array P431 Controller) http://h18000.www1.hp.com/products/quickspecs/xxxxx_na/xxxxx_na.html (Smart Array P830 Controller) http://h18000.www1.hp.com/products/quickspecs/14532_na/14532_na.html (SmartCache)	

Additional Options

HP Secure Encryption	HP Secure Encryption No Media E-LTU per Drive	D8S85AAE
	HP Secure Encryption No Media Flexible License per Drive	D8S84A
	NOTE: HP Secure Encryption is supported on the HP Smart Array P830, P430 and P431 as an option. HP Secure Encryption licensing is based on the number of physical drives requiring encryption.	
	NOTE: For more information about HP Secure Encryption, go to www.hp.com/go/hpsecureencryption	
HP Tape Backup	**NOTE:** For the complete range of tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP tape backup products see: http://www.hp.com/storage/SPOCK and www.hp.com/go/ebs. **NOTE:** For Internal drives to be connected to DL servers please make sure that you order rack mount kit as well.	
	HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit	C0L99A
	HP StoreEver LTO-6 Ultrium 6650 SAS Internal Tape Drive	EH963A
	HP StoreEver LTO-6 Ultrium 6650 SAS External Tape Drive	EH964A
	HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive	EH969A
	HP StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
	HP StoreEver 1/8 G2 LTO-6 Ultrium 6250 FC Tape Autoloader	C0H19A
HP Tape Storage Systems	**HP StoreEver MSL6480**	
	HP StoreEver MSL6480 Scalable Base Module	QU625A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14604_na/14604_na.html	
HP Disk Backup	**NOTE:** For the complete range of RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP disk backup products see: http://www.hp.com/storage/SPOCK. NOTE: For Internal drives to be connected to DL servers please make sure that you order rack mount kit as well.	
	HP RDX320 USB3.0 External Disk Backup System	B7B63A
	HP RDX500 USB3.0 Internal Disk Backup System	B7B64A
	HP RDX500 USB3.0 External Disk Backup System	B7B66A
	HP RDX1000 USB3.0 Internal Disk Backup System	B7B67A
	HP RDX1000 USB3.0 External Disk Backup System	B7B69A

Additional Options

HP Disk Storage Systems	**Disk Enclosures**	
	HP D2600 w/12 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 48TB Bundle	E7W32A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13404_na/13404_na.html	
HP Storage Options	**Storage Fibre Channel HBA**	
	NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	QLogic Fibre Channel HBAs	
	HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
	HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
	HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter	QW971A
	HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter	QW972A
	NOTE: Only UEFI BIOS mode is supported.	
	NOTE: Legacy mode and UEFI mode Secure Boot will supported post initial release	
HP Uninterruptible Power Systems	**HP Rack-mountable UPS**	
	HP R1500 G3 Uninterruptible Power Supply (UPS)	
	HP R1.5kVA G3 1U NA Uninterruptible Power System	AF469A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14059_na/14059_na.html	
	HP R/T3000 G2 Uninterruptible Power System (UPS)	
	HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System	AF466A
	HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System	AF467A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14058_na/14058_na.html	
	R5000 Uninterruptible Power System (UPS)	
	HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14109_na/14109_na.html	
	R7000 Uninterruptible Power System (UPS)	
	HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
	HP R5KVA and R7KVA 3U Extended Runtime Module	AF464A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14110_na/14110_na.html	
	HP Rackmountable 3 Phase Uninterruptible Power Systems (UPS R8000/3 and R12000/3)	
	HP R8000/3 8000kVA Three Phase NA 6U Rackmount Uninterruptible Power System	AF431A
	HP R12000/3 12000VA Three Phase NA 6U Rackmount Uninterruptible Power System	AF429A

Additional Options

NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12857_na/12857_na.html

NOTE: For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups.

NOTE: For additional information on sizing your server, please reference: http://www.upssizer.com.

NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.

HP Basic Power Distribution Units (pPDU)	**HP Basic Power Distribution Unit: 1U/0U Version**	
	HP 1.9kVA 120 Volt 12 Outlet NA/JP Basic Power Distribution Unit	H5M54A
	HP 3.6kVA 200-240 Volt 12 Outlet WW Basic Power Distribution Unit	H5M56A
	HP Basic Power Distribution Unit: Half Height Version	
	HP 2.8kVA 120 Volt 18 Outlet NA/JP Basic Power Distribution Unit	H5M55A
	HP 3.6kVA 200-240 Volt 20 Outlet WW Basic Power Distribution Unit	H5M57A
	HP 4.9kVA 208 Volt 20 Outlet NA/JP Basic Power Distribution Unit	H5M58A
	HP 8.6kVA 208 Volt Three Phase 18 Outlet NA/JP Basic Power Distribution Unit	H5M61A
	HP Basic Power Distribution Unit: Mid Height Version	
	HP 4.9kVA 208 Volt 30 Outlet NA/JP Basic Power Distribution Unit	H5M59A
	HP 8.3kVA 208 Volt 36 Outlet NA/JP Basic Power Distribution Unit	H5M60A
	HP Hardwired 200-240 Volt 36 Outlet WW Basic Power Distribution Unit	H5M75A
	HP 5.7kVA 208 Volt Three Phase 27 Outlet NA/JP Dual Voltage Basic Power Distribution Unit	H5M63A
	HP 8.6kVA 208 Volt Three Phase 30 Outlet NA/JP Dual Voltage Basic Power Distribution Unit	H5M64A
	HP 8.6kVA 208 Volt Three Phase 30 Outlet NA/JP Basic Power Distribution Unit	H5M62A
	HP Basic Power Distribution Unit: Full Height Version	
	HP 11kVA 400 Volt Three Phase 42 Outlet NA Basic Power Distribution Unit	H5M67A
	HP Basic Power Distribution Unit: 480/277 Volt Version	
	HP 13.2kVA 480 Volt Three Phase 15 Outlet NA Basic Power Distribution Unit	H3X07A
	HP 19.9kVA 480 Volt Three Phase 30 Outlet NA Basic Power Distribution Unit	H3X08A
	HP 800VA - 277V Input / 230V Output NA Rack Mount Transformer	H3X09A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14557_na/14557_na.html	
	NOTE: Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit: www.hp.com/go/rackandpower.	

Additional Options

HP Remote Monitoring Power Distribution Units (mPDU)	**HP Remote Monitored Power Distribution Unit: 1U Version**	
	HP 2.8kVA 120 Volt 12 Outlet NA/JP Monitored Power Distribution Unit	D9N43A
	HP 3.6kVA 200-240 Volt 12 Outlet WW Monitored Power Distribution Unit	D9N46A
	HP 4.9kVA 208 Volt 12 Outlet NA/JP Monitored Power Distribution Unit	D9N44A
	HP Remote Monitored Power Distribution Unit: Half Height Version	
	HP 3.6kVA 200-240 Volt 16 Outlet WW Monitored Power Distribution Unit	D9N45A
	HP Remote Monitored Power Distribution Unit: Mid Height Version	
	HP 4.9kVA 208 Volt 24 Outlet NA/JP Monitored Power Distribution Unit	D9N47A
	HP 8.6kVA 208 Volt Three Phase 21 Outlet NA/JP Monitored Power Distribution Unit	D9N51A
	HP 5.7kVA 208 Volt Three Phase 21 Outlet NA/JP Dual Voltage Monitored Power Distribution Unit	D9N52A
	HP 8.6kVA 208 Volt Three Phase 24 Outlet NA/JP Dual Voltage Monitored Power Distribution Unit	D9N53A
	HP Remote Monitored Power Distribution Unit: Full Height Version	
	HP 8.3kVA 208 Volt 33 Outlet NA Monitored Power Distribution Unit	D9N49A
	HP 14.4kVA 208 Volt Three Phase 24 Outlet NA Monitored Power Distribution Unit	D9N58A
	HP 16.6kVA 400 Volt Three Phase 33 Outlet NA Monitored Power Distribution Unit	D9N61A
	HP 17.3kVA 208 Volt Three Phase 27 Outlet NA/JP Monitored Power Distribution Unit	D9N54A
	HP 17.3kVA 208 Volt Three Phase 24 Outlet NA/JP Monitored Power Distribution Unit	D9N59A
	HP 16.6kVA 400 Volt Three Phase 24 Outlet NA Monitored Power Distribution Unit	D9N62A
	HP 19.9kVA 480 Volt Three Phase 30 Outlet NA Monitored Power Distribution Unit	D9N63A
	HP Environmental Sensor for Remote Monitored PDUs	
	HP Environmental Sensor for Remote Monitored PDUs	E2D53A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14669_na/14669_na.html	

HP Intelligent Power Distribution Units (iPDU)	**iPDU Core Units**	
	HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
	HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF521A
	HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
	HP 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit	AF533A
	HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
	HP 11.4kVA 16A 415V Three Phase L22-20 NA Core Intelligent Power Distribution Unit	AF900A
	HP 17.3kVA 24A 415V Three Phase L22-30 NA Core Intelligent Power Distribution Unit	AF902A
	HP 17.3kVA 24A 415V Three Phase IEC309 NA Core Intelligent Power Distribution Unit	AF901A
	HP 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF535A
	HP 17.3kVA 24A 415V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF537A
	iPDU Kits with Standard Extension Bars	
	HP 4.9kVA 24A Single Phase NA/JP Intelligent Modular Power Distribution Kit	AF531A

Additional Options

	HP 8.6kVA 24A Three Phase NA/JP Intelligent Modular Power Distribution Kit	AF532A
	iPDU Extension Bars	
	HP 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A
	HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13650_na/13650_na.html	
HP Rack Options	**HP Location Discovery Services**	
	HP 36U Location Discovery Kit	BW945A
	HP 42U Location Discovery Kit	BW946A
	HP 47U Location Discovery Kit	BW947A
	HP TFT7600 G2 KVM Console and Monitor (TFT7600 G2)	
	HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A
	HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor	AZ885A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13731_na/13731_na.html	
	HP Server Console Switches	
	HP Server Console 0x2x8 Port Analog Switch	AF616A
	HP Server Console 0x2x16 Port Analog Switch	AF617A
	HP TAA 0x2x16xKVM Server Console G2 Switch	AF626A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11834_na/11834_na.html	
	HP Server Console Switch G2 with Virtual Media & CAC	
	HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
	HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
	HP KVM CAT5 1-pack USB Interface Adapter	336047-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13475_na/13475_na.html	
	HP IP Console Switch G2 with Virtual Media & CAC	
	HP 1x4 USB/PS2 KVM Console Switch	AF611A
	HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
	HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
	HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13474_na/13474_na.html	

Additional Options

HP USB and SD Options

HP Flash Media Kits for USB Drives

HP 2GB USB Flash Media Drive Key Kit	608447-B21

NOTE: HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.

HP Enterprise Mainstream Flash Media Kits for Memory Cards

HP 8GB SD Enterprise Mainstream Flash Media Kit	726113-B21
HP 8GB USB Enterprise Mainstream Flash Media Drive Key Kit	737953-B21
HP 32GB microSD Enterprise Mainstream Flash Media Kit	700139-B21

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/13971_na/13971_na.html

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HP Care Pack Services

Proactive Care

NOTE: Collaborative Support plus Proactive services delivered by the onshore, local language Advanced Solution Center (ASC), end-to-end case ownership from a Technical Solution Specialists and Technical Account Manager who remotely delivers firmware/software revision management, proactive scans and incident trend reports. Recommended for customers running a virtualized infrastructure and/or customers who desire an enhanced call support experience.

HP 3 year 4 hour 24x7 ProLiant DL58x Proactive Care Service	U2Z68E
HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL58x Proactive Care Service	U2Z71E
HP 3 year 6 hour Call To Repair 24x7 ProLiant DL58x Proactive Care Service	U2Z74E
HP 3 year 6 hour Call To Repair 24x7 withDefective Media Retention ProLiant DL58x Proactive Care Service	U2Z77E

Proactive Care Personalized Support - Environmental Option

NOTE: To add an onsite Account Support Manager (ASM) to Proactive Care. ASM is an assigned resource who delivers support planning and brings technical expertise and best practices advices for the customer's environment.

HP 3 year ISS ProactiveCare Personalized Support	U6W98E

Installation Services

NOTE: Reduce the time required to get your system up and running and help minimize disruptions to your business.

HP Install ProLiant DL58x Service	U4617E
HP Startup ProLiant DL58x Service	U4618E
HP Installation and Startup for Insight Control Software	UF369E
HP Startup HP Systems Insight Manager Service	UA041E

NOTE: For more information, customer/resellers can contact:
http://www.hp.com/services/carepack

Memory

HP SmartMemory

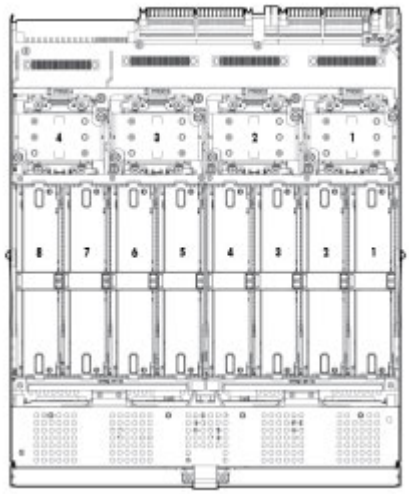
New HP SmartMemory now provides additional protection for your servers. With HP Authentication it can verify that you have true HP Qualified Memory in your HP ProLiant Gen8 server. With HP SmartMemory your new HP ProLiant server can take advantage of additional Gen8 enhancements in performance, durability and future manageability support through HP Active Health System.

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool:
www.hp.com/go/ddr3memory-configurator

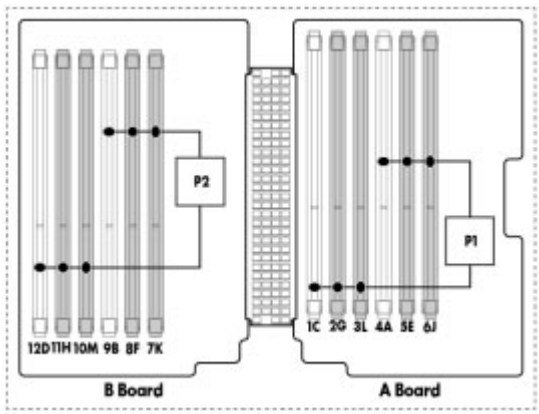
Memory Sub-system Architecture

As shown in the figure above, memory cartridge to processor association as follows:

- Memory cartridges installed without a corresponding processor are not utilized:
  - Processor 1 corresponds to memory cartridges 1 and 2.
  - Processor 2 corresponds to memory cartridges 3 and 4.
  - Processor 3 corresponds to memory cartridges 5 and 6.
    NOTE: Memory cartridges 5 and 6 are not recognized if processor 3 is not installed.
  - Processor 4 corresponds to memory cartridges 7 and 8.
    NOTE: Memory cartridges 7 and 8 are not recognized if processor 4 is not installed.



Each memory cartridge contains 12 DIMM slots as shown in figure below:



Memory

The memory subsystem in this server is divided into channels. Each processor supports eight channels, and each channel supports three DIMM slots, as shown in the table below. White DIMM slots denote the first slot of a channel (Ch 4A, Ch 9B, Ch 1C, Ch 12D...).

Channel	Population order	Slot number
1	A E J	4 5 6
2	B F K	9 8 7
3	C G L	1 2 3
4	D H M	12 11 10

The server can operate in independent channel mode (performance) or combined channel mode (lockstep). Lockstep mode improves the system reliability and availability. If running with RDIMM (built with x4 DRAM devices), the system can survive the complete failure of two DRAM devices (DDDC). Running in independent mode, the server can only survive the complete failure of a single DRAM device (SDDC).

Independent channel mode (Performance mode):
The server supports the following DIMM speeds as shown below in the table.

DIMM type	DIMM rank	Voltage	1 DIMM per channel	2 DIMMs per channel	3 DIMMs per channel
RDIMM	Single-rank (4 GB)	LV	1333	1066	1066 (1.5V)*
RDIMM	Single-rank (4 GB)	STD	1333	1333	1066
RDIMM	Single-rank (8 GB)	LV	1333	1066	1066 (1.5V)*
RDIMM	Single rank (8 GB)	STD	1333	1333	1066
RDIMM	Dual-rank (16 GB)	LV	1333	1066	1066 (1.5V)*
RDIMM	Dual-rank (16 GB)	STD	1333	1333	1066
LRDIMM	Quad-rank (32GB)	STD	1333	1333	1333

NOTE:

- Depending on the number of DIMMs installed, whether LRDIMMs or RDIMMs are installed, and whether the DIMM is operating and standard or low voltage, the memory clock speed can be reduced to 1333 or 1066 MT/s.
- When 3 DIMMS per channel are installed with the LV DIMMS the system will default to standard voltage.

Lockstep mode:
The server supports the following DIMM speeds as shown below in the table.

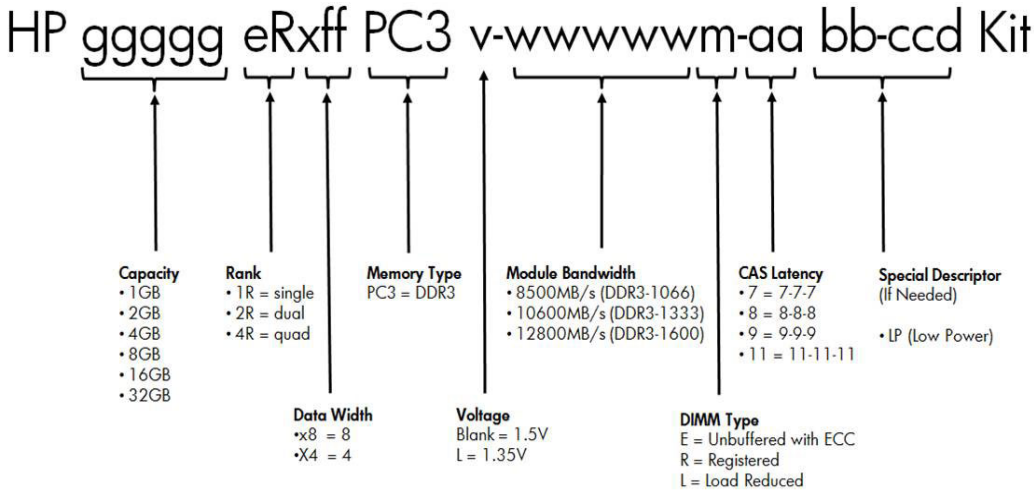
Memory

DIMM type	DIMM rank	Voltage	1 DIMM per channel	2 DIMMs per channel	3 DIMMs per channel
RDIMM	Single-rank (4 GB)	LV	1333	1066	1066 (1.5V)*
RDIMM	Single-rank (4 GB)	STD	1333	1333	1066
RDIMM	Single-rank (8 GB)	LV	1333	1066	1066 (1.5V)*
RDIMM	Single rank (8 GB)	STD	1333	1333	1066
RDIMM	Dual-rank (16 GB)	LV	1333	1066	1066 (1.5V)*
RDIMM	Dual-rank (16 GB)	STD	1333	1333	1066
LRDIMM	Quad-rank (32GB)	STD	1600	1600	1333

NOTE:

- Depending on the number of DIMMs installed, whether LRDIMMs or RDIMMs are installed, and whether the DIMM is operating and standard or low voltage, the memory clock speed can be reduced to 1333 or 1066 MT/s.
- When 3 DIMMS per channel are installed with the LV DIMMS the system will default to standard voltage.

DIMM Classification and Identification



Memory Population Guidelines

- To maximize performance, install two memory cartridges per processor and balance the total memory capacity between all installed processors.
- When multiple processors are installed, HP recommends installing the DIMMs in sequential alphabetical order: 4A, 9B, 1C, 12D, and so on.
- LRDIMMs support higher densities than single- and dual-rank RDIMMs, and higher speeds than quad-rank RDIMMs. This support enables you to install more high capacity DIMMs, resulting in higher system capacities and higher bandwidth.
- Do not mix LRDIMMs with any other DIMM type (RDIMM, LVDIMM).
- RDIMM population is limited to a maximum of eight logical ranks per channel. Therefore, only two quad rank RDIMMs are supported per channel. If there are more than eight physical ranks per channel, LRDIMMs rank multiplication provides support for three DIMMs per channel.
- Lockstep mode requires specific population requirements. See lock-step configuration below for more information.

NOTE: UDIMMs are not supported. This server does not support mixing LRDIMMs, RDIMMs, or UDIMMs. Attempting to mix any combination of these DIMMs can cause the server to halt during BIOS initialization.
For detailed memory configuration rules and guidelines, use the Online DDR3 Memory Configuration Tool on the HP website (http://www.hp.com/go/ddr3memory-configurator).

Memory

Online Sparing Configuration Guidelines

Online spare memory provides protection against degraded DIMMs by reducing the likelihood of uncorrected memory errors. This protection is available without any operating system support.

Online spare memory protection dedicates one rank of each memory channel for use as spare memory. The remaining ranks are available for OS and application use. If correctable memory errors occur at a rate higher than a specific threshold on any of the non-spare ranks, the server automatically copies the memory contents of the degraded rank to the online spare rank. The server then deactivates the failing rank and automatically switches over to the online spare rank.

For Online Spare memory mode configurations, observe the following guidelines:

- Observe the general DIMM slot population guidelines.
- Each channel must have a valid online spare configuration.
- Each channel can have a different valid online spare configuration.
- Each populated channel must have a spare rank.
- A single dual-rank DIMM is not a valid configuration.
- LRDIMMs are treated as dual-rank DIMMs.

HP Memory

NOTE: HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html

NOTE: LRDIMM, RDIMM, UDIMM, and HDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support LRDIMM, RDIMM and UDIMMs.

Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713981-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713985-B21
HP 4GB (1x4GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708637-B21
HP 8GB (1x8GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	731765-B21
HP 8GB (1x8GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	731761-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708641-B21
HP 32GB (1x32GB) Quad Rank x4 PC3-14900L (DDR3-1866) Load Reduced CAS-13 Memory Kit	708643-B21

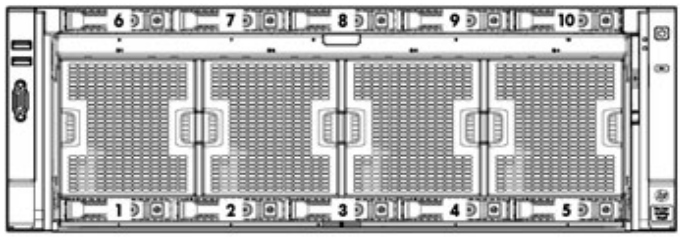
Memory Expansion Options

HP DL580 Gen8 12 DIMM Slots Memory Cartridge	732411-B21

NOTE: A minimum of two memory cartridges are required (one per processor).

NOTE: A minimum of two memory DIMMs are required per cartridge (minimum of four DIMMs per server).

Storage



1-10 Ten (10) SFF Hot-plug HDD/SSD drive bays
NOTE: Drives installed in bays 6-10 require the optional SAS backplane.

Maximum Internal Storage

Hot Plug SFF SAS	12TB	10 x 1.2TB
Hot Plug SFF SAS SSD	8TB	10 x 800GB
Hot Plug SFF SATA SSD	8TB	10 x 800GB

Technical Specifications

System Unit	**Dimensions** (H x W x D) (with bezel)	6.94" x 19.0" x 27.55" (17.6cm x 48.3cm x 70.0cm)	
	Weight (approximate)	Maximum (all hard drives, power supplies, DIMMs and processors installed)	100.0 lb (45.4 kg)
		Minimum (one hard drive, two power supplies, four DIMMs, and two processors installed)	66.0 lb (30.0 kg)
	Input Requirements (per power supply)	Rated Line Voltage	100 - 127 VAC, 200 - 240 VAC
		Rated Input Current	12 A (at 100 VAC), 8 A (at 200 VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	1161 W (at 100 VAC), 1598 W (at 240 VAC)
	BTU Rating	Maximum	3960 BTU/hr (at 100 VAC), 5450 BTU/hr (at 200 VAC)
	Power Specifications	**NOTE:** To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor - Click on the system of interest. Example: DL580 G7 - Follow the instructions of the next screens.	
	Power Supply Output (per power supply)	Rated Steady-State Power	910 W (low line), 1300 W (high line)
		Maximum Peak Power	910 W (low line), 1300 W (high line)
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.

Technical Specifications

	Altitude	Operating	3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
		Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
		Idle	
		L WAd	6.4 B (with PCI-E)
		L pAm	NA dBA
		Operating	
		L WAd	6.8 B (with PCI-E)
		L pAm	NA dBA
	Emissions Classification (EMC)	**FCC Rating**	Class A
		Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1
		NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.	

HP Smart Array P830i/2 G	**Dimensions**	Embedded
	Disk Drive and Enclosure Interface - Transfer rate	12 Gb/s SAS, 6 Gb/s SAS & SATA
	SAS Connectors	2x8 ports double-wide internal
	Cache Memory Speed	DDR2-800MHz with 72-bit wide bus
	Server Interface	x4 PCIe 2.0 provides 2GB/s maximum bandwidth
	SAS Speed	8 12Gb/s SAS links provide 9.6 GB/s maximum bandwidth
	Cache Memory	Zero Memory RAID has no cache memory 40-bit 256MB ECC protected cache (battery upgrade available) 72-bit 512MB BBWC or 72-bit 512MB and 1G FBWC
	Logical Drives Supported	Zero Memory, Up to 2 logical volumes (8 physical drives) Up to 64 logical drives with cache
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6, 60 (Advanced Data Guarding) RAID 5, 50 (Distributed Data Guarding) **NOTE:** A minimum of 512 MB cache is required to enable RAID 5, 50, 6, 60 RAID 10 (Striping & Mirroring)

		RAID 0 (Striping), RAID 1 (Mirroring)	
HP Ethernet 1Gb 4-port 331FLR Adapter	**HP Flexible Network Technology**	HP Flexible Network Technology consists of replaceable network solutions to meet customer requirements now and in the future.	
	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX IEEE 802.3ad 1000Base-TX IEEE 802.1p 100Base-TX IEEE 802.1q 100Base-TX	
	Data Transfer Method	PCI-Express 2.0 x4	
	Controller	BCM5719	
	Network Transfer Rate	10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Full-Duplex)	2000 Mb/s
	Connector	RJ-45	
	Cable Support	10Base-T	Categories 3, 4, or 5 UTP; up to 328 ft (100 m)
		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
		1000Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	**HP Flexible Network Technology**	HP Flexible Network Technology consists of replaceable network solutions to meet customer requirements now and in the future.	
	Network Interface	IEEE 802.3 SFP+ (SX, SR & LR)	
	Compatibility	802.3, 802.3ae, 802.3x, 802.2x, 802.3ad, 802.1Qaz, 802.1Qau, 802.1Qbb, 802.1Qbg, 802.1ax	
	Data Transfer Method	PCI-Express 2.0 x8	
	Controller	Broadcom BCM57810S chipset	
	Network Transfer Rate	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth.	
	Connector	Two SFP+	
	Cable Support	Maximum distances for CAT6 cable are 30 meters (98 feet). Maximum distances for CAT6a are 100 meters (328 feet).	

Technical Specifications

HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	**HP Flexible Network Technology**	HP Flexible Network Technology consists of replaceable network solutions to meet customer requirements now and in the future.	
	Network Interface	SFP+ for Direct Attach Cable copper or fiber	
	Compatibility	802.3, 802.1ab, 802.3x, 802.3ad, 802.1p/ 802.1q, 802.3ae, 802.1Qau	
	Data Transfer Method	PCI-Express 2.0 x8	
	Controller	Intel® 82599 Controller	
	Network Transfer Rate	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth.	
	Connector	Two SFP+	
	Cable Support	10Base-T	Categories 3, 4, or 5 UTP; up to 328 ft (100 m)
		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
		1000Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)

Environment-friendly Products and Approach	**End-of-life Management and Recycling**	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.